International Journal of Human Kinetics, Health and Education
ISSN: 2449-0326
Vol 11, No1 2026
IJoHKHE

Knowledge Gaps and Health Education Needs in the Utilisation of Prevention of Mother-to-Child Transmission Services among Antenatal Women in Udu Local Government Area, Delta State

Nyerhovwo Vera Onavwie

Department of Public Health, School of Public Health Sciences, Delta State College of Health Sciences and Technology, Ofuoma-Ughelli, Delta State, Nigeria.

Email: funyere@gmail.com; Telephone: 08030955524

Abstract

Prevention of mother-to-child transmission (PMTCT) of HIV/AIDS remains a major maternal and child health priority because effective prevention depends not only on service availability but also on women's knowledge, attitudes, support systems and use of antenatal services. In Nigeria, gaps in PMTCT utilisation persist despite the expansion of antenatal and Human Immunodeficiency Virus (HIV) prevention services. This study examined knowledge gaps and health education needs in the utilisation of PMTCT services among antenatal women in Udu Local Government Area, Delta State. A descriptive cross-sectional survey design was adopted. The study involved 163 antenatal women selected from health facilities in Udu LGA. Data were collected using the Questionnaire on Awareness and Utilisation of Prevention of Mother-to-Child Transmission of HIV/AIDS among Women Attending Antenatal Clinic in Udu Local Government Area, Delta State (QAUPMCTHA). Data were analysed using frequency, percentage and chi-square statistics at the 0.05 level of significance. Findings revealed that overall awareness of PMTCT was almost evenly divided, with 50.0% of respondents' aware and 50.0% not aware. However, important knowledge gaps were identified. A majority of respondents were unaware of when treatment should begin to prevent transmission, while more than half did not understand the role of antenatal care in preventing mother-to-child transmission. Chi-square results showed significant relationships between PMTCT service utilisation and awareness, healthcare-provider attitude and partner support. The study concludes that PMTCT utilisation in Udu LGA requires more than general awareness. Targeted antenatal health education should emphasise early treatment initiation, the preventive role of antenatal care, respectful provider-client communication and male partner involvement.

Keywords: Prevention of mother-to-child transmission; HIV/AIDS; Health education; Antenatal women; Service utilisation

Introduction

Mother-to-child transmission of HIV remains a preventable but persistent maternal and child health problem in Nigeria. Nigeria's National HIV and AIDS Strategic Plan 2023–2027 reported that only 33% of pregnant women living with HIV had received antiretroviral medicines for the prevention of mother-to-child transmission by the end of 2022, demonstrating a substantial gap between the availability of biomedical interventions and effective programme utilisation (National Agency for the Control of AIDS [NACA], 2023). According to the World Health Organization (WHO, 2024), HIV may be transmitted from a mother living with HIV to her child during pregnancy, labour, delivery or breastfeeding, with a transmission risk of 15%–45% in the absence of effective

intervention. This figure is important because it shows that PMTCT is not merely a general HIV-control concern but a maternal and infant survival issue requiring early diagnosis, antiretroviral therapy, antenatal attendance, safe delivery counselling, infant-feeding guidance and postnatal follow-up. Astawesegn et al. (2024) reinforce this position by conceptualising PMTCT as a service cascade that begins with all pregnant women and continues through maternal HIV testing, ART initiation, infant prophylaxis and early infant diagnosis. Therefore, although PMTCT is medically achievable, its success depends on whether women understand and use the full continuum of services rather than isolated components of care.

Nigeria's PMTCT situation illustrates this contradiction more sharply because national progress in HIV control has not eliminated paediatric infections. The National Agency for the Control of AIDS (2023) (NACA) reports that Nigeria's HIV prevalence declined from 5.8% in 2001 to 1.3% in 2021, yet PMTCT coverage remains below 50%, contributing to about 22,000 mother-to-child HIV transmission cases yearly. Similarly, United Nations Children's Fund (2025) (UNICEF) reports that global new HIV infections among children under five declined from about 310,000 in 2010 to 120,000 in 2024, indicating progress but also showing that preventable paediatric infections persist. The Nigerian evidence therefore supports a critical argument: the continued occurrence of mother-to-child transmission cannot be explained by lack of biomedical intervention alone; it must also be examined through health education, service access, counselling quality, stigma, disclosure, partner support and provider-client interaction.

A major weakness in many PMTCT discussions is the tendency to treat awareness as a single, sufficient condition for utilisation. However, Eshetu et al. (2023) using Demographic and Health Survey data from 97,130 women in eight high HIV-burden countries, found that only 57.89% had good knowledge of mother-to-child transmission, although 96.07% had heard of HIV/AIDS. This contrast is analytically important because it confirms that general HIV awareness does not necessarily mean correct knowledge of transmission timing, treatment initiation, antenatal care, infant-feeding risk or follow-up requirement. Saka et al. (2021) reported a similar knowledge-practice gap among women living with HIV in Oyo State, Nigeria, where 74.2% had good PMTCT knowledge and 89% had positive perception, but only 42.9% utilised PMTCT services during pregnancy. Thus, this study deliberately moves beyond broad "awareness and utilisation" by focusing on the specific knowledge gaps that should guide health education.

Beyond general awareness, utilisation of PMTCT services is shaped by interconnected individual, health-system and household factors. Astawesegn et al. (2024) identified maternal knowledge, antenatal attendance, counselling, accessibility, stigma, healthcare delivery and partner involvement as important determinants of women's engagement with the PMTCT continuum. In Nigeria, Okusanya et al. (2022) found variations in healthcare providers' knowledge of national PMTCT recommendations, suggesting that the availability of services does not necessarily guarantee accurate counselling or consistent implementation. This is particularly important because women require clear information about HIV testing, early initiation of antiretroviral therapy, treatment adherence, infant-feeding practices and postnatal follow-up. Utilisation may also be affected by household relationships, as male partners can influence antenatal attendance, disclosure of HIV status, access to transportation and adherence to treatment recommendations (Mbadugha et al., 2019; Falade-Fatila & Adebayo, 2020). Consequently, PMTCT utilisation should not be understood solely as an individual woman's decision. It reflects the interaction between practical knowledge,

the quality of provider-client communication and the level of social and partner support available to the woman.

Udu LGA is therefore not treated in this article as a mere geographical label, but as a local implementation context. Antenatal clinics are the practical sites where women should receive HIV testing information, treatment guidance, disclosure counselling, infant-feeding advice and partner-involvement messages. However, when antenatal education is too general, rushed or weakly reinforced, women may attend clinics without acquiring the actionable knowledge needed to complete the PMTCT pathway. This concern is consistent with Okusanya et al. (2022), who showed that provider knowledge of PMTCT guideline recommendations varied in Nigerian primary healthcare settings, thereby suggesting that service quality and communication cannot be separated from women's utilisation.

The problem addressed in this study is that PMTCT utilisation may remain suboptimal when antenatal women lack practical knowledge about treatment timing, the preventive role of antenatal care and continued engagement with services. Existing studies have examined PMTCT awareness and utilisation broadly, but limited local empirical evidence has shown the specific PMTCT knowledge gaps that should inform targeted health education among antenatal women in Udu LGA. This study therefore examines knowledge gaps and health education needs in the utilisation of PMTCT services among antenatal women in Udu Local Government Area, Delta State. Specifically, it identifies PMTCT knowledge gaps, determines utilisation level, examines the relationship between awareness and utilisation, assesses the influence of healthcare-provider attitude and partner support, and draws out the health education needs implied by the findings. The hypotheses tested were that PMTCT awareness, healthcare-provider attitude and partner support do not significantly influence utilisation of PMTCT services among antenatal women in Udu LGA.

Methods

Study design and setting

This study adopted a descriptive cross-sectional survey design to examine knowledge gaps and health education needs in the utilisation of prevention of mother-to-child transmission (PMTCT) services among antenatal women in Udu Local Government Area, Delta State. This study adopted a descriptive cross-sectional survey design. The design was appropriate because it enabled the collection of data on respondents' existing PMTCT knowledge, utilisation patterns, healthcare-provider attitudes and partner support without manipulating the study variables.

The study was conducted in Udu Local Government Area, Delta State, because the area had a defined population of 477 antenatal attendees across nine health facilities but limited local empirical evidence on PMTCT knowledge and service utilisation.

Study population

The population consisted of 477 antenatal women attending selected health facilities in Udu LGA. This population was appropriate because antenatal clinics are the routine service points where pregnant women should receive HIV testing, PMTCT counselling, antiretroviral guidance, infant-feeding education and follow-up messages. Earlier PMTCT studies have similarly treated antenatal settings as critical entry points for measuring PMTCT knowledge and utilisation because pregnancy

creates a timely opportunity for counselling, testing and treatment linkage (Alemu et al., 2018; Yeshaneh et al., 2023).

Sample size and sampling technique

A sample of 163 antenatal women was selected for the study. This procedure improved representativeness by ensuring that facilities with higher antenatal attendance contributed more respondents than smaller facilities, while still maintaining facility-level spread across the local government area (LGA). This logic is consistent with Mbadugha et al. (2019), who used a cross-sectional design and multi-stage sampling to study male involvement in maternity care in Enugu State.

Data collection instrument

Data were collected using a researcher-developed Questionnaire on Awareness and Utilization of Prevention of Mother-to-Child Transmission of HIV/AIDS among Women Attending Antenatal Clinic in Udu Local Government Area, Delta State" (QAUPMCTHA). The questionnaire covered demographic characteristics, PMTCT awareness, PMTCT service utilisation, accessibility-related issues, cultural beliefs, healthcare-provider attitude and partner support. For the purpose of this study, , the PMTCT awareness items were treated as knowledge-gap indicators because they measured practical knowledge of whether HIV-negative birth is possible, when treatment should begin, how transmission occurs, how transmission risk can be reduced, and how antenatal care supports PMTCT. This repositioning is justified by Eshetu et al. (2023), who showed that general HIV awareness may be high while specific knowledge of mother-to-child transmission remains incomplete.

The instrument was assessed for face and content validity by three experts from the Department of Health, Safety and Environmental Education, University of Benin, comprising the researcher's supervisor and two other experts. Their observations, suggestions and recommendations were incorporated into the final version of the questionnaire; The reliability of the instrument was assessed using the test–retest method. It was administered to 20 pregnant women who were not included in the main study sample and was administered again to the same participants after an interval of two weeks. Scores from the two administrations were analysed using Pearson's product–moment correlation.

Data collection procedure

Participation was voluntary, and respondents were assured of confidentiality and anonymity. Informed consent was obtained before questionnaire administration. With the aid of research assistants, 163 copies of the questionnaire were administered to the respondents.

Data analysis

Data were analysed using frequency and percentage to describe knowledge gaps and utilisation patterns, while chi-square statistics was used to test the hypotheses at the 0.05 level of significance. Chi-square was appropriate because the major variables were categorical, including aware/not aware, adequate/inadequate utilisation, positive/negative provider attitude and high/low partner support.

Results

The results show that PMTCT awareness among antenatal women in Udu LGA was not completely absent, but it was uneven and incomplete. This distinction is important because this is concerned with knowledge gaps rather than awareness in a general sense.

Table 1: **PMTCT Knowledge Gaps among Antenatal Women**

PMTCT knowledge indicator	Aware n (%)	Not aware n (%)
Possibility of HIV-negative baby with preventive measures	86 (52.8)	77 (47.2)
Correct timing of treatment initiation	63 (38.7)	100 (61.3)
Main route of mother-to-child transmission	97 (59.5)	66 (40.5)
Measures for reducing transmission risk	95 (58.3)	68 (41.7)
Role of antenatal care in PMTCT	69 (42.3)	94 (57.7)
Grand mean	82 (50.32)	81 (49.68)

As shown in Table 1, 86 respondents (52.8%) knew that a woman living with HIV/AIDS could have an HIV-negative baby if proper preventive measures were taken, while 77 respondents (47.2%) did not know this. Similarly, 97 respondents (59.5%) knew the primary way through which HIV could be transmitted from mother to child, and 95 respondents (58.3%) knew that antiretroviral medication could reduce transmission risk. These findings suggest that many respondents had basic PMTCT awareness. However, the same table also shows that the most action-oriented knowledge areas were weaker. Only 63 respondents (38.7%) knew when treatment should begin, while 100 respondents (61.3%) did not know. Also, only 69 respondents (42.3%) understood the role of antenatal care in preventing mother-to-child transmission, while 94 respondents (57.7%) did not. Overall, 50.32% of responses indicated awareness and 49.68% indicated non-awareness, showing an almost balanced divide between knowledge and knowledge deficit.

Table 2: **Level of Utilisation of PMTCT Services among Antenatal Women**

Utilisation level	Frequency	Percentage
Adequate utilisation	77	47.2
Inadequate utilisation	86	52.8
Total	**163**	**100.0**

Table 2 shows that 77 respondents (47.2%) had adequate utilisation of PMTCT services, while 86 respondents (52.8%) had inadequate utilisation. Thus, slightly more than half of the antenatal women had inadequate utilisation of PMTCT services.

Table 3: **Association between PMTCT Awareness and Utilisation of PMTCT Services**

PMTCT awareness	Adequate utilisation, n (%)	Inadequate utilisation, n (%)	Total
Not aware	60 (73.2)	22 (26.8)	82
Aware	17 (21.0)	64 (79.0)	81
Total	**77 (47.2)**	**86 (52.8)**	**163**

$\chi^2(1, N = 163) = 44.50, p < .001$.

Table 3 shows a statistically significant association between PMTCT awareness and utilisation of PMTCT services, $\chi^2(1, N = 163) = 44.50$, $p < .001$. The null hypothesis was therefore rejected. This indicates that respondents' PMTCT awareness category was significantly associated with their level of service utilisation.

Table 4: **Association between Healthcare-Provider Attitude and Utilisation of PMTCT Services**

Healthcare-provider attitude	Adequate utilisation, n (%)	Inadequate utilisation, n (%)	Total
Negative	57 (73.1)	21 (26.9)	78
Positive	20 (23.5)	65 (76.5)	85
Total	**77 (47.2)**	**86 (52.8)**	**163**

$\chi^2(1, N = 163) = 40.06$, $p < .001$.

Table 4 shows a statistically significant association between healthcare-provider attitude and utilisation of PMTCT services, $\chi^2(1, N = 163) = 40.06$, $p < .001$. The null hypothesis was therefore rejected, indicating that healthcare-provider attitude was significantly associated with respondents' utilisation of PMTCT services.

The observed association also points to the need for regular training of healthcare providers in respectful, confidential, empathetic and non-stigmatising PMTCT counselling. Such training should strengthen women's confidence to ask questions, receive HIV-related guidance and remain engaged with the PMTCT continuum.

Table 5**: Association between Partner Support and Utilisation of PMTCT Services**

Level of partner support	Adequate utilisation, n (%)	Inadequate utilisation, n (%)	Total
Low support	62 (62.6)	37 (37.4)	99
High support	15 (23.4)	49 (76.6)	64
Total	**77 (47.2)**	**86 (52.8)**	**163**

$\chi^2(1, N = 163) = 23.95$, $p < .001$.

Table 5 shows a statistically significant association between partner support and utilisation of PMTCT services, $\chi^2(1, N = 163) = 23.95$, $p < .001$. The null hypothesis was therefore rejected, indicating that partner support was significantly associated with PMTCT service utilisation.

The association between partner support and PMTCT utilisation indicates the need for partner-inclusive health education. Appropriate strategies include male-partner education, voluntary couple counselling and community dialogue, while protecting women's autonomy, safety and confidentiality.

Discussion

The findings of this study showed that PMTCT awareness among antenatal women in Udu LGA should not be interpreted simply as whether women have heard of HIV or mother-to-child

transmission. Although the overall awareness level was almost evenly divided between aware and unaware respondents, the more important finding is that women demonstrated weaker knowledge in areas that directly determine preventive action. This is consistent with Eshetu et al. (2023), who found that 96% of women in high HIV-burden countries had heard of HIV/AIDS, but only 58% had good knowledge of mother-to-child transmission. The implication is that general awareness may create familiarity, but it does not necessarily produce actionable PMTCT knowledge. This study therefore supports the argument that health education must move from broad sensitisation to specific counselling on when treatment should begin, why antenatal care matters, how transmission can occur, and how women can remain within the PMTCT continuum.

The strongest knowledge gaps in tis study were the timing of treatment initiation and the role of antenatal care in preventing transmission. This pattern agrees with Yeshaneh et al. (2023), who reported low levels of good knowledge, attitude and practice towards PMTCT among antenatal care attendees, suggesting that clinic attendance alone does not guarantee correct understanding of PMTCT procedures. However, this study extends this debate by showing that the problem is not only low knowledge in general, but poor understanding of practical PMTCT steps. Saka et al. (2021) similarly found a knowledge-practice divide in Oyo State, where 74% of women living with HIV had good PMTCT knowledge, but only 43% utilised PMTCT services during pregnancy. This confirms that even when knowledge exists, utilisation may remain incomplete if counselling, partner support and service experience do not reinforce action.

Antenatal care therefore emerges as both a service point and a potentially underused health education platform. In principle, ANC should provide repeated opportunities for HIV testing, treatment explanation, adherence counselling, infant-feeding guidance, disclosure support and early infant diagnosis education. Yet the low understanding of ANC's role in this study suggests that antenatal messages may be too general, too rushed, too biomedical or insufficiently adapted to women's literacy, fears and household decision-making conditions. Eshetu et al. (2023) found that women who discussed MTCT during ANC visits had higher odds of good MTCT knowledge, while women who had ever tested for HIV also had stronger knowledge. This supports the argument that ANC becomes effective only when attendance is accompanied by purposeful counselling, not when women merely pass through clinic routines.

The significant association between healthcare-provider attitude and PMTCT utilisation further shows that knowledge acquisition is shaped by service interaction. Provider attitude matters because PMTCT involves sensitive issues such as HIV testing, disclosure, stigma, treatment adherence, infant-feeding decisions and fear of blame. Okusanya et al. (2022) showed that provider knowledge and readiness are central to PMTCT implementation in Nigerian primary healthcare settings, while Opoku-Danso et al. (2023) reported that midwives recognised maternal knowledge gaps as a barrier to effective PMTCT service delivery. Therefore, provider attitude should not be treated as a minor interpersonal issue. Respectful communication, privacy, non-judgmental counselling and clear explanations are part of the health education environment. Conversely, harsh communication, stigma or poor counselling may silence women, reduce questions and weaken utilisation even where services are technically available.

Partner support was also significantly associated with PMTCT utilisation, indicating that PMTCT decisions are embedded in household and relational conditions. Although some programmes focus mainly on pregnant women, this approach may be insufficient where male partners influence

transport, clinic attendance, disclosure, HIV testing, treatment adherence and infant-care decisions. Falade-Fatila and Adebayo (2020) argued that men's understanding and participation are crucial for women's access to pregnancy-related care, while Mbadugha et al. (2019) emphasised that men often function as key family decision-makers in Nigerian reproductive health contexts. This does not mean that women's autonomy should be reduced; rather, partner involvement should be structured as supportive, non-coercive and confidentiality-sensitive. Male partner education, couple counselling and community dialogue can therefore strengthen PMTCT utilisation when they are designed to protect women's safety and decision-making.

Table 1 shows that respondents' greatest health education needs concerned the correct timing of treatment initiation and the role of antenatal care in PMTCT. Specifically, 100 respondents (61.3%) did not know when treatment should begin, while 94 respondents (57.7%) did not understand the preventive role of antenatal care. Although more than half of the respondents understood the main transmission routes and measures for reducing transmission, knowledge deficits of 40.5% and 41.7%, respectively, indicate that these topics also require reinforcement. Health education should therefore prioritise early ART initiation, the importance of continuous antenatal attendance, transmission risks during pregnancy, delivery and breastfeeding, and adherence to the complete PMTCT continuum.

Overall, the study contributes by converting survey findings into a practical health education framework for PMTCT utilisation in Udu LGA. For practice, nurses, midwives and community health educators should deliver repeated, targeted and action-oriented PMTCT messages across ANC contacts. For policy, primary healthcare facilities should strengthen PMTCT counselling protocols, provider communication training and male-involvement strategies. For future research, intervention studies should test whether targeted health education improves PMTCT utilisation and retention in care. The study is limited by its focus on antenatal women in Udu LGA and reliance on self-reported questionnaire data; it did not measure HIV status, viral load, infant outcomes or clinical completion of the PMTCT cascade.

Conclusion

This study examined knowledge gaps and health education needs related to the utilisation of PMTCT services among antenatal women in Udu Local Government Area, Delta State. The findings showed that respondents possessed some basic knowledge of mother-to-child transmission and its prevention, but important practical gaps remained. The most prominent deficiencies concerned the correct timing of treatment initiation and the role of antenatal care in preventing HIV transmission. PMTCT service utilisation was also statistically associated with awareness, healthcare-provider attitude and partner support.

The findings demonstrate that the physical availability of PMTCT services alone is insufficient to ensure their effective utilisation. Health facilities should provide targeted and repeated PMTCT education from the first antenatal contact and throughout subsequent visits, with particular emphasis on early ART initiation, HIV testing, treatment adherence, transmission during pregnancy, delivery and breastfeeding, safe infant-feeding practices and continued follow-up. Nurses, midwives and other antenatal-care providers should receive regular training in respectful, confidential, empathetic and non-stigmatising communication. Health facilities should also introduce voluntary partner-inclusive education, couple counselling and community-based male-engagement programmes while safeguarding women's autonomy and confidentiality. Implementing these recommendations would

help convert general PMTCT awareness into informed preventive action and improve continuity of care among antenatal women in Udu LGA.

Acknowledgements

The author acknowledges the support of the Department of Health, Safety and Environmental Education, University of Benin, and appreciates the cooperation of the antenatal women, health workers and health facilities in Udu Local Government Area that participated in the study.

References

Alemu, Y. M., Habtewold, T. D., & Alemu, S. M. (2018). Mother's knowledge on prevention of mother-to-child transmission of HIV, Ethiopia: A cross sectional study. *PLoS ONE*, *13*(9), e0203043. https://doi.org/10.1371/journal.pone.0203043

Astawesegn, F. H., Mannan, H., Stulz, V., & Conroy, E. (2024). Understanding the uptake and determinants of prevention of mother-to-child transmission of HIV services in East Africa: Mixed methods systematic review and meta-analysis. *PLoS ONE*, *19*(4), e0300606. https://doi.org/10.1371/journal.pone.0300606

Eshetu, H. B., Kebede, N., Bogale, E. K., Zewdie, A., Kassie, T. D., Anagaw, T. F., Mazengia, E. M., Gelaw, S. S., & Fenta, E. T. (2023). Knowledge of prevention of mother-to-child transmission of HIV among reproductive age women in high HIV/AIDS prevalent countries: A multilevel analysis of recent Demographic and Health Surveys. *PLoS ONE*, *18*(10), e0292885. https://doi.org/10.1371/journal.pone.0292885

Falade-Fatila, O., & Adebayo, A. M. (2020). Male partners' involvement in pregnancy related care among married men in Ibadan, Nigeria. *Reproductive Health*, *17*(1), 14. https://doi.org/10.1186/s12978-020-0850-2

Mbadugha, C., Anetekhai, C., Obiekwu, A., Okonkwo, I., & Ingwu, J. (2019). Adult male involvement in maternity care in EnuguState, Nigeria: A cross-sectional study. *European Journal of Midwifery*, *3*(September), 16. https://doi.org/10.18332/ejm/112258

National Agency for the Control of AIDS. (2023). *Assessing Nigeria's efforts in ending mother-to-child transmission of HIV*. NACA.

Okusanya, B., Nweke, C., Gerald, L. B., Pettygrove, S., Taren, D., & Ehiri, J. (2022). Are prevention of mother-to-child HIV transmission service providers acquainted with national guideline recommendations? A cross-sectional study of primary health care centers in Lagos, Nigeria. *BMC Health Services Research*, *22*(1), 769. https://doi.org/10.1186/s12913-022-08152-6

Opoku-Danso, R., & Habedi, D. S. (2023). Midwives' perceptions of and attitudes towards prevention of mother-to-child-transmission of HIV. *Curationis*, *46*(1), e1–e11. https://doi.org/10.4102/curationis.v46i1.2353

Saka, A., Onyeneho, C., & Ndikom, C. (2021). Perception and utilization of prevention of mother-to-child transmission of human immunodeficiency virus (HIV) services among women living with HIV. *European Journal of Midwifery*, *5*(September), 1–6. https://doi.org/10.18332/ejm/140454

Yeshaneh, A., Abebe, H., Tafese, F. E., & Workineh, A. (2023). Knowledge, attitude, and practice towards prevention of mother-to-child transmission of HIV among antenatal care attendees in Ethiopia, 2020. *PLoS ONE*, *18*(2), e0277178. https://doi.org/10.1371/journal.pone.0277178

World Health Organization. (2024). *Mother-to-child transmission of HIV*. World Health Organization.

UNAIDS. (2025). *Global HIV & AIDS statistics — Fact sheet*. Joint United Nations Programme on HIV/AIDS.

UNICEF. (2025). *HIV: Elimination of mother-to-child transmission*. UNICEF Data.